

Response

Applicants, through their attorney, respectfully request the Examiner to consider the application in view of the included amendments and remarks.

Support

Applicants have amended claim 1 to specify that the mixture of alcohols used in the esterification of the copolymer (B) has an average carbon length 9.8 to 11.7 on a weight % basis. Support for this amendment is found on page 6, lines 20-28 of the specification.

No other elements of the claims have been changed.

Remarks

The Examiner rejected claims 1-17 under 25 U.S.C. 103(a) as being unpatentable over Lal et al. (EP 0626442). The Examiner finds that Lal teaches a fatty carboxylic acid ester composition from the transesterification of at least one naturally occurring triglyceride and a pour point depressant. The alcohols used in the transesterification of Lal are aliphatic and contain 1 to 24 carbon atoms. The Examiner concludes that the teaching of Lal makes the present invention obvious. Applicants respectfully disagree.

Applicants point out that the claims have been amended to specify that the alcohol mixture used to esterify the copolymer of (B) has an average carbon length of 9.8 to 11.7. The average carbon length as defined in claim 1 represents a selection over the teachings of Lal, as the required range results in improved performance, as evidenced by the examples summarized on page 11 of the specification and as Lal provides no teaching regarding the feature that provides this improvement, namely the average carbon length of the alcohols used in the esterification of copolymer.

In support of our position, Applicants note that the selected range for the average carbon length of the alcohol mixture used to esterify the copolymer of (B) in claim 1 of 9.8 to 11.7 is very narrow compared to the wide range of average carbon lengths possible in Lal. The reference notes, on page 7, lines 51-54 of Lal, that the ester groups that may be used (and so the alcohols that may be used in the esterification) range from groups with 8 to 24 carbon atoms for the high molecule weight group and 3 to 5 carbon atoms for the low molecule weight group. While not providing any specific teaching of average carbon lengths, Lal roughly allows for average carbon lengths that range from just above 3 carbon atoms to just

below 24 carbon atoms. The required range in claim 1 of the present application covers 1.9 carbon atoms, less than 10% of the range provided for in Lal.

Applicants also note that the range required by the present invention does not overlap with the preferred teachings provided by Lal. Lal provides, on page 7, lines 27-30, that the possible ranges of high molecule weight ester group to low molecule weight ester group, in the form of molar ratios, are (50-100):(5-50), (high molecule weight ester group):(low molecule weight ester group). Lal also provides “preferred” molar ratios of (70-85):(15-30). Both of these ranges equate to average carbon chain lengths of approximately 6 to 24 carbon atoms, based on the alcohols used in Lal. Both these ranges are wide compared to the selection required by the present invention.

More specific carbon chain lengths provided for in Lal, as represented by the examples of constituent (B), are found in the reference starting on page 9, line 27 to page 11, line 42. The examples of Lal have the following average carbon lengths for the mixture of alcohols used to esterify the copolymer of (B), calculated from the information provided in the examples:

<u>Example in Lal</u>	<u>Average Carbon Length</u>
B-1, B-2, B-3, B-4, B-5, B-6, B-7	14.1
B-8	11.8
B-9	11.7
B-10	14.8
B-11	7.9

None of the examples in Lal are within the claimed range of the present invention of 9.8 to 11.7.

Applicants again note that Lal does not provide any teaching regarding average carbon length or its possible impact on performance. The average carbon lengths shown above are not provided by Lal, rather Applicants have calculated them based on the information provided in Lal. In contrast, the present invention has made the connection of average carbon length to performance and has demonstrated the surprising results made possible by taking advantage of this feature.

Finally, Applicants note that the required average carbon length range is not arbitrarily chosen. The range required by the present invention is chosen based on performance, as evidenced by the examples in the specification. The data in the table on page 11 of the specification shows the superior performance, in the form of lower cold filter plugging points across several rapeseed methyl ester samples, of examples 3 and 4 (which

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have average carbon lengths within the claimed range) relative to comparative examples 1, 2 and 3 (which have average carbon lengths above and the below the required range). This data shows that the required range of the present invention is based on the improved performance obtained and not an arbitrary selection.

Based on the surprising results made possible by the present invention, and the improvement they provide over the teachings of the cited reference, as demonstrated by the examples in the specification, the present invention is both novel and non-obvious over Lal. Applicants respectfully request that all rejections based on Lal be removed and the current claims be allowed.

Conclusion

For the foregoing reasons it is submitted that the present claims are novel and unobvious over the cited reference, and in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. Therefore an early and favorable reconsideration is respectfully requested. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

Any required fees or any deficiency or overpayment in fees should be charged or credited to deposit account 12-2275 (The Lubrizol Corporation).

Respectfully submitted,
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